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MEASURING THE SENSE OF COMMUNITY
IN A MAGNET SCHOOL

by
Marianne Dell

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts Degree
of
The Graduate School
at
Rowan University
April, 2002

Approved by

Professor

Date Approved April 17, 2002

Abstract

Marianne E. Dell

Measuring the Sense of Community
in a Magnet School
2002
Dr. Theodore Johnson
Educational Leadership

The purpose of this study was to measure covenantal climate within a magnet high school, and to determine if specific professional development (Project SPARC) enhanced staff commitment to the magnet school's focus. The Royal and Rossi Measures of Sense of Community were administered in the form of a questionnaire to all staff within the school both before and after Project SPARC was offered as a professional development program during the summer of 2001.

The questionnaires consisted of sixty-four statements requiring Likert-type responses. Data were grouped according to length of respondent membership on the staff of the school as well as participation or non-participation in SPARC.

The results of the two surveys were compared and revealed a significant increase in the sense of community after SPARC, but more importantly, the survey structure provided a blueprint to pinpoint weaknesses within the school community. Staff members were encouraged to dialogue through School Management Team meetings, PAC Team meetings and other teacher collaboratives. Issues concerning work groups; interactions between departments and grade levels; student recruitment and behaviors; and individual responsibility of administrators, staff, students, and parents were discussed with the ultimate goal of strengthening the mission of school and the commitment of all stakeholders.

Mini-Abstract

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The purpose of this study was to measure covenantal climate within a magnet high school, and to determine if specific professional development (Project SPARC) enhanced staff commitment to the magnet school's focus. Data from pre-program and post-program surveys were compared and reflected an increase in sense of community after staff development.

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I would like to thank my Field Mentor and Principal, Stephanie Branch who has been a remarkable role model throughout this journey. Ms. Branch not only set an example, but encouraged me, as well as all of the staff within the school, to lead with courage, care and intelligence both outside and within our classrooms. I would also like to thank Dr. Theodore Johnson, my University Mentor, whose insight and seasoned advice were more valuable than all of the materials in my bibliography.

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Chapter One

Introduction

Focus of the Study

What is Sense of Community? Why is it important in the health of a school?

These two questions were answered in this study, but at this point it is perhaps more important to set the stage for the intern's discussion by giving some general background concerning American high schools.

A Study of High Schools, a five year research project, was presented by the National Association of Secondary Principals and the National Association of Independent School more than seventeen years ago. Despite the recommendations made in this study to secondary schools to create, through fundamental changes in the educational system, an atmosphere of common respect for individuals and learning, very little has been accomplished. In fact, the most popular media images of the twenty-first century American high school are essentially unchanged from the nineteenth century, autocratic school designed by Nicholas Butler, Charles Eliot and the Committee of Ten .

Fox Broadcasting's Boston Public is in its second year on television, and it seems to be a very popular show. However, the fictitious high school's architectural structure is dark, cavernous, and airport-sized. It warehouses rather than shelters its members. Youth in this portrait are alienated and self-absorbed. The number of students is profound, and so their individual identities are obscured. The viewer can not extrapolate the origins or destinations of any particular youth unless they are cameoed as the problem of the week.

In this television production the educators, too are self-absorbed. They have a narrow, personal vision fine-tuned by their individual subject specialty. They exist in the school only in their wing, on their hall, and in the cubicle of their classrooms. The viewer rarely sees them instructing. Their interactions with students are always problematic and sometimes even lewd. The teachers are seemingly incapable of making good decisions, and they are often buffoons.

At the center of this Orwellian masterpiece is the pontificating but clueless administrator. He is well meaning, but beset by law, the foibles of others and his own incompetence at juggling too many jobs in too little time. He struggles valiantly, but he is a paper tiger.

While this video portrait is the creation of Hollywood writers it is maddeningly evident to any parent of an American teenager that pieces of this weekly television story occur daily in many of our high schools. Depictions are fairly accurate because the authors are recent graduates whose memories are fresh enough to write the scripts. Equally troubling is that these stories are not new ones. They have been told in the voices of many celluloid teens from Corliss Archer to Dobie Gillis to Mr. Kotter's Sweat Hogs to the nameless kids of Boston Public. The names and costumes change but the character roles and situations remain the same.

The day to day operation of a good school is absorbing material for a documentary film, but it would not make a salable premise for a dramatic television series. Good schools have very little conflict, and conflict is Emmy Award fodder. Good schools are like beehives. They hum with activity. Individuals are focused on personal goals, but ultimately, all goals bolster the success of the entire learning community. And,

fortunately these schools do exist. One good school, BMA High School (Brimm Medical Arts High School), is the subject of this study.

The Fall 2001 issue of Harper's Magazine challenged four American educational leaders, John Taylor Gatto, Kristin Kearns Jordan, TheodoreSizer and Thomas Stewart to map out a design for a good school, a "School on a Hill." The panel members agreed that primary schools are effective owing to the network of people who are able to keep young children interested and engaged, but that after the fourth grade, as students move toward more autonomy, they become perfect cogs for the economic machine. They become Consumers. "They define themselves by what they buy."

Presumably, our comprehensive high schools have become factories that crank out buyers of stuff – monstrous houses, Sport Utility Vehicles, designer clothing, but they do not produce questioners who can effectively ask "How?" and "Why?" Consumerism leaves little time for the inner life associated with human freedom, the life of the "feisty thinker." A society of individuals that define themselves by what they buy are terrifically self-absorbed. They do not function in a community since their mission is their next big purchase.

The School on a Hill designed by the panel requires students to be able to answer the question "Why are you in this school?" The School on the Hill has one mission, and everyone who is a member of the school community knows that the mission is an end product that will effect everyone in the community. The School on the Hill requires learning to be relevant to child and culture, not a nebulous global culture, but relevant to the culture of their community, their parents, their families.

The magnet high school is a School on the Hill. It is a unique learning opportunity because of the school community's commitment to a relevant theme that is infused throughout the curriculum. It is a school that is easily distinguished from other, comprehensive high schools because of the learning community's covenantal respect for one another.

Purpose of the Study

It is the social culture of the magnet school that the Intern has investigated, observed and attempted to measure in her own School on the Hill, the BMA High School to determine if specific professional development enhances the Sense of Community of the School.

Sense of Community is defined by Bryk and Driscoll as shared vision, shared sense of purpose, shared values, caring, trust, teamwork, communication, participation, incorporation of diversity, and respect and recognition.

The intern administered an instrument, the Royal and Rossi Measures of Sense of Community Questionnaire based on the Bryk and Driscoll definition in March 2001. The SPARC (Science Preparation Alliance of Rutgers and Camden) Summer Institute, the specific professional development, was held from July 2 through July 28, 2001 and was attended by more than half of the faculty and members of BMA. The goal of the institute was to foster excitement by providing opportunities to learn a variety of skills; presenting current learning activities related to brain, behavioral and cognitive sciences; providing opportunities for investigation and use of inquiry learning methods; and through a series of field trips, exposing participants to the local institutions that deal with sciences of the

brain, such as Monell Chemical Senses Center, Coriell Institute for Medical Research and the Temple University Psychology Department.

Time was given to teachers to formulate ideas for cross-content classroom collaborations. Collaboration is a driving mechanism in the health of BMA.

The Sense of Community Questionnaire was administered again in September, 2001 so that the intern could determine if participation in the Summer Institute enhanced commitment to the mission of BMA. The intern's study determined the increase in the measure of the BMA high school's sense of community.

Definitions

<i>Abbott v. Burke</i>	New Jersey Supreme Court decision re Raymond Abbott, et al v. Fred G. Burke, et al. June 5, 1990 through May 21, 1998 concerning equity in education in the state of New Jersey.
<i>Abbott District</i>	One of 28 urban districts in the state of New Jersey identified and guaranteed funding to insure its citizens a "thorough and efficient" system of education as defined by the New Jersey Core Curriculum Content Standards.
<i>WSR (Whole School Reform)</i>	A method strongly endorsed by the justices of the US Supreme Court by which Abbott Districts can enable students to reach the goals set forth in the New Jersey Core Curriculum Content Standards implemented by adoption of a nationally recognized, effective model of best educational practices and evaluation.
<i>Alternative Model of WSR</i>	A school named by the state that exhibits the goals of WSR through demonstrated and consistent achievement of state standards for more than five years and demonstrates implementation of exemplary educational practices and evaluation based on recognized research.
<i>Magnet School</i>	Also known as a School of Choice. Learning Community based on a theme-driven curriculum.
<i>Sense of Community</i>	A pervasive sense of mutual respect, caring, inclusiveness, trust, empowerment and commitment within a group.

Limitations of the Study

The Sense of Community study results provided a blueprint to improve the school climate in one, small school and to improve collegiality by pinpointing areas of weakness or concern. Improved sense of community can enhance the covenantal climate of a small, magnet school, but may be relevant for individual grade levels within larger schools.

While sense of community could be improved, the quality and quantity of interdisciplinary collaborations would be difficult to initiate in a larger school because of the size of the faculty and the student body, and perhaps, even the size of the building.

Setting of the Study

BMA High School is a magnet high school located in an isolated, industrial area on the southeastern boundary of the city of Camden, New Jersey. The school district is an Abbott District. The school building is a converted bookbindery. All classrooms are housed on one floor. Although the building has a full basement it is used almost exclusively for storage. The basement ceiling height is just less than nine feet, but with exposed utility pipes this space is substandard for classroom use.

The school has 15 classrooms, four science laboratories, a library and a multipurpose room. There is no gymnasium or auditorium, and so students and teachers travel by bus to a local university for Physical Education. The school provides intense health care exposures as reality-based education. For example, visitations to area medical and science facilities and shadowing experiences at area hospitals are experiences provided for students, and as many as twenty-five percent of the student body with

several faculty members may leave the premises for all or part of an instructional day to accomplish these visitations.

There are thirty-six members of the BMA faculty and staff. The faculty and staff are racially and ethnically mixed. Fifty-six percent of faculty and staff are African American; thirty-one percent white of European decent, eleven percent, Latino; and two percent Asian Indian. Sixty five percent of the faculty members have advanced degrees in their content area. There are currently two faculty members with doctoral degrees in science: One faculty member is a practicing Podiatrist, the other, a Veterinarian.

Interdisciplinary Collaboration is a hallmark of BMA. Collaboration time is built into teacher schedules. Teachers meet every two weeks for round-table discussions concerning specific grade level projects. The projects are based on medical themes that are woven into all subject areas.

The student census stands at two hundred and seventy. The attendance rate at BMA is 3% higher than the state average for both staff and students. Class size is 20% smaller. Mobility rate is 1%. While the dropout rate for the first four years was 0%, it has increased to 4%, but still ranks under the state average. One hundred percent of eleventh grade students pass the High School Proficiency Assessment, however most students continue to score less than 1,000 on the Scholastic Assessment Test. One hundred percent of BMA graduates are admitted to two or four year colleges or universities.

All BMA students exceed state and district graduation requirements in science and math, because all BMA students are required to take three or more laboratory science classes consisting of Biology, Chemistry and Physics. In addition students are required to

take Anatomy, Genetics, and Introduction to Microbiology. Most students take either Biochemistry or Introduction to Research in their senior year. Advanced Placement courses are offered in Chemistry and Biochemistry.

Students have consistently been first place winners in the Coriell Science Fair and the Delaware Valley Science Fair. Science fair participation and planning is a particularly intense cooperative venture between faculty and students and exemplifies the spirit of Inquiry Learning at its best.

BMA students are required to take a minimum of three courses of Mathematics including Algebra I and II, and Geometry. Most seniors and some juniors are enrolled in Trigonometry and Pre-Calculus. Some seniors opt to take Calculus and Advanced Placement Calculus. However, less than 1% of students are able to attain scores on Advanced Placement Tests which exempt them from similar college courses.

With the exception of Advanced Placement English and a senior elective class in Art that is a collaboration between Reading and Art, all other courses are identical to those offered at the two comprehensive high schools in the school district, and of course, BMA classes have the additional medical infusion.

Significance of the Study

BMA high school has been in existence for seven years. During the first two years of the school classes were held in a tight, borrowed space. Faculty and students developed the initial vision for the school. This initial group has had more of an investment in the school. Project SPARC was made available to all faculty members when the school was only a concept, and it indoctrinated this group into a theme-driven style of teaching, and cemented the idea of a Medical Magnet School. No subsequent

groups were availed this opportunity until July 2001, and still almost fifty percent of staff and faculty have not participated in the program.

BMA high school's more recent faculty, especially those that have not been indoctrinated by the SPARC program are perceived to be non-participants in the school's vision. Perhaps it is due to their new teacher status or because they consider themselves interlopers. Their non-participation weakens the school.

The Sense of Community study presents data that supports the hypothesis that specific professional development, that is Project SPARC, does galvanize the shared vision, collegiality, mutual respect, communication, caring and trust of BMA High School. This study pinpoints specific areas that can be improved.

Organization of the Study

Following the Chapter One Introduction, each subsequent chapter provided further supportive materials that ultimately fortified the Sense of Community of BMA High School.

Chapter Two reviewed current literature concerning Sense of Community, the teacher as a model of leadership, themes of caring in education and the role of parents and community in the education of adolescents.

Chapter Three described the Royal and Rossi Measures of Sense of Community in terms of the subjects' relationships with co-workers, the school, and the students. The population, times the survey was administered is included in this chapter.

Chapter Four detailed the data collected from both the pre SPARC and post SPARC survey administrations as well as an analysis and comparison of the data to prove the hypothesis that specific professional development increases sense of community.

Chapter Five elaborates on the implications of the study, areas of weakness that can be corrected, and a firm plan of how to implement change. Chapter Five concludes the study.

Chapter Two

Review of Literature

Introduction

Sense of Community is built by the actions and interactions of members within a school. The literature selected by the intern describes practices that lead to stronger community as well as practices to be avoided. The intern added literature that described operations of comprehensive high schools as well, but more as a point of contrast with communal, magnet high schools.

Before the carnage at Columbine High School, and certainly after it, the social stratification of our secondary schools had been examined and noted in educational research journals, and books. While schools have been providing accommodations for top-tracked students who excel and demand accelerated courses, and accommodations for students with special needs stemming from neurological or orthopedic or behavioral challenges requiring specially trained teachers, average students, those who are chronically disinterested, have been virtually ignored. High schools have seemingly become shopping malls with specialty shops for academically gifted students, special needs students, athletes, thespians and members of the marching band. (Powell, Farrar and Cohen 1998)

The average student does not place importance in education, nor does he or she make school a priority in his or her life. They do not perceive of themselves as partners in the life of the school. Parents of these students do not invest any time in their children's school other than for obligatory conferences or "back to school night." Because they do

not own membership in the extracurricular life of the school, parents of average students do not attend athletic events or dramatic or musical performances. They miss out on the life of the school because their children have not committed to it.

The teachers of average students do not expect to communicate with parents unless there is imminent danger of student failure. At times of failure Guidance Counselors and classroom teachers have few or no alternatives to suggest to students and parents other than attendance at summer school.

A violin teacher at a prominent music school in Philadelphia could say to the parents of a floundering student: "He has skill, but he plays without passion. Unless he has expressed a burning desire to do this, you will need to find another outlet for him or you will continue to waste your money." Educators in public schools can not be this blunt. Yet so many of our students play without passion in our schools, and it would seem logical that educational systems should be searching for relevant alternatives.

George Wood suggests that to build a high school one must know the students. One must be concerned with the welfare of students as opposed to the needs of economy. He describes the high school as the last shared experience that all Americans enjoy, so that we should engage every mind, not to dispose them toward work, but to make them into good citizens. That is, our students must learn to be a part of a community outside of school as well as in it. (Wood, 1999)

Nel Noddings asks "What do we want for our children? What do they need from education? What does our society need?"

“Academic adequacy,” the outcome of providing the same curriculum for everyone is counterproductive to forming moral, competent adults. Academic adequacy is dishonest because it suggests that there is a finite amount of important material to be learned, and that mastery of the material is nice but not necessary.

And so, for our children, our society and from our educational system we want our children to be respected for their honest, useful and masterful work, no matter what that work is. Noddings makes the point that educational systems must recognize the diversity of human skills and interests, respect them, and provide for them without creating hierarchies. Uniformity of curriculum as is encountered in comprehensive high schools discourages creative and critical thinking and fosters opposition between subject areas.

Noddings’ prescription for a Morally Defensible Mission for schools is congruent with the Sense of Community criteria of Bryk and Driscoll. She presents six ingredients including 1. Clear goals /vision; 2. Common links between school members / care of affiliative needs; 3. Ethos of caring / relaxing control impulse; 4. Absence of Program Hierarchies /empowerment; 5. Themes of care as frequent points of discussion /Ethos of caring 6. Competence in every domain /respect, trust, empowerment. (Noddings, 1/1995) (Bryk and Driscoll, 1988) (Raywid, 1993) (Royal and Rossi, 1999)

Breaking the mold of the current secondary school design is desirable, but political power brokers find it necessary to “impose stunningly conventional curriculum frameworks that reflect the status quo.” “The measure of our student’s learning must be the understanding of the unfamiliar.” Inquiry learning, which is an essential practice in

the magnet high school, allows this to happen, since the responsibility of discovery falls on the student. “No two students, no two teachers, no two communities are ever precisely alike or even alike from one year to the next.” (Sizer, 1998) Therefore, to make innovative schools work despite politics they must be strong communities, and teachers, parents and students must know each other well so that curriculum can be relevant and meaningful to all stakeholders.

Teachers in traditional secondary schools expect autonomy. They may manage their classrooms effectively, however research suggests that collegiality and experiencing a strong sense of community improve instruction and feelings of satisfaction and productivity of teachers. Smaller schools provide optimum conditions for communally organized schools. (Bryk and Driscoll, 1988) Because there are fewer individuals it is easier to know and appreciate accomplishments of colleagues, students and their parents. Regular, scheduled interactions among groups build and maintain community.(Royal and Rossi 1999) However, not all teachers welcome collaboration, and would prefer the traditional anonymity of comprehensive schools. These individuals need opportunities to experience the cohesion of purpose that interaction and mutual dependence from supportive communal groups provide. (Westheimer and Kahne, 1993) John Goodlad in A Place Called School concurs that the faculty members of a communal school require training that gives them a positive, shared sense of purpose with the school.

A shared sense of purpose is also essential to sense of community, and this can only occur when the learning community grows out of the common needs and interests of its members. Sometimes, however, it is necessary to defer to strong opinions of the

minority, keeping in mind that divergent ideas are fuel for progress. “Newcomers can add strength rather than detract from the group.” (Westheimer and Kahne, 1993)

Leadership emerges from collaborative groups, and not in the sense that teachers become school administrators, but that collaborative groups together create and promote consistency in policy and practices among classrooms and throughout the operation of the school. However, the principal is ultimately the spearhead for promoting improvement. (Hallinger and Murphy, 1986)

The intern has referred often to teachers and their sense of community, however the principal has an important role in the strength of the community. William Glasser, borrowing ideas introduced by Dr. Edwards Deming to the Japanese after World War II has brought noncoercive management practices into his Quality Schools. And while Glasser refers to principals as either boss or leader, he applies the same labels to classroom teachers. A crucial factor in school reform is the need for an effective leader both at the head of a school and the classroom.

Boss managers limit the quality and productivity of communal groups since these individuals display little concern or respect for the opinions and needs of the group. Boss-Managers promise control over students who do not follow rules or complete work, but fail to deliver consistent outcomes. Students disregard threats of sanctions, and as teachers become powerless to effect change in student behavior, classrooms become the territory of adversaries. Leaders provide patience and creativity in finding solutions to problems.

Leaders engage teachers in discussions concerning what needs to be done; they encourage suggestions in improvement of systems; they ask teachers to self-evaluate because they respect the teachers' expertise; they provide a noncoercive, nonadversarial atmosphere in which to work. (Glasser, 1998) In essence noncoercive leaders have respect for others in the learning community and empower them to perform. Choice Theory espouses a strong sense of community within schools. As TheodoreSizer aptly suggests, "Create a school without collegial trust and the authority to carry out improvements and you will create a third-rate school. Its faculty will be placeholders, not wise people." (Barth, 1990)

When schools embrace community they define themselves, what the relationships will be between parent, student, teacher and administrator, what their common values are, how their collaborations will embody their values and what their obligations are to the global community. Making decisions by consensus on this order, the community norms are substituted for traditional leadership. Members internalize the purpose or mission of the community and become bound to it. However, collaboration must be on going. Time for collegiality must be built into the school schedule.(Sergiovanni, 1992)

Community is not a static state, and so in addition to the definitions the intern has put forth from Noddings, Raywid, Bryk and Driscoll, Royal and Rossi et al, the need for on going interactions and experiences should be added.

Introducing new members to a participatory culture is important and can be accomplished by indoctrinating novices with the school's vision in professional development. In addition, celebrating the community's history, allows the newcomers to

see that “everyone has something to contribute.” Older staff, those present at the genesis of the community, convey their initial excitement about endless possibilities in a new school, and also of the tensions associated with creating a new idea in education, while other veterans offer individual anecdotal accounts of activities from past years. New staff should know that they have not landed a job but have become an integral part of a family. (Westheimer, 1998)

Sergiovanni writes that when the mission or vision or purpose of the school and the commitment of the members to the school and each other become the basis for the school, the school is transformed “from a secular to a sacred organization...from a mere instrument to achieve certain ends to a virtuous enterprise.”(Sergiovanni, 1992)

This idea coincides with Nel Noddings’ Themes of Care. The Virtuous School pays homage to morality in human nature where the interests of others take precedence over self-interest. But actions in a Virtuous School are not only motivated by goodwill, they are also spawned by what is effective. (Sergiovanni, 1992)(Noddings, 1995)

Noddings has written extensively about the inadequacy of a one-size-fits-all, standards-based education, and how coercion in this type of curriculum does not contribute to the growth of democratic character. A learning community avoids hierarchies in curriculum. Our national crime, according to Noddings, is not that fewer students are taking demanding courses, but that there are large numbers of students who enroll in rigorous courses but come away with very little from them. Each course that is taught should be worthwhile; relationships between students and teachers should make it

possible for teachers to guide students responsibly and learn to make wise choices.

(Noddings, 4/1999, 7/1999)

Sergiovanni defines how community makes it possible, and that is by developing a spirit of curiosity, inquiry and reflection in students. By molding students who are able to manage their own learning they become thinkers that are less dependent on their teachers. (Sergiovanni, 1992)

Newman and Wehlage make the point for developing independent thinkers by describing the task of designing a bridge. They call this enormous task “authentic adult achievement” by which standards for authentic student achievement can be established. Both old knowledge and new knowledge in the field of construction are needed. Special conditions and needs concerning the length, height, peaks of stress and load, impact of the environment and weather feed the new knowledge. Problems of safety and use must be addressed as well as aesthetics. Much of the bridge project is described in the designer’s journals and in written and oral communication with municipalities and planning commissions. When it is completed the bridge gives great satisfaction to the designer. The engineer needed construction knowledge and a disciplined approach to inquiry to accomplish his goal.

Through a combination of knowledge, skills and technology things are made. Students also are dependent on knowledge, skills and technology in school. To be successful, authentic achievers they must construct knowledge, building on old knowledge with new knowledge. Conventional schools rely on transmission of old knowledge only, and so students rarely can see a connection to the world outside of

school. School knowledge is irrelevant to the average student.(Newman and Wehlage, 1995)

Magnet schools provide opportunities for students to amass their own new knowledge outside of the classroom through theme-based shadowing activities and lectures presented by practicing professionals. Deal and Peterson cite S. M. Johnson's 1990 study of private schools which concludes that cohesive culture is positively related to excellence. In a Newman and Associates five-year study (Newman and Associates, 1996) research points to social support and a primary focus on student learning as indicators of successful, flourishing schools. In six additional studies strong community was a deciding factor in effectiveness and productivity. Collegiality and collaboration increased communication and problem solving. The learning community supported effective and successful change and improvement within studied schools. Members feel positive and motivated in a communal school with vision and ennobling purpose. The focus of daily behavior is elevated to what is truly important and what is valued by the community. (Deal and Peterson, 1999)

Magnet schools have been an important component of urban education for more than two decades, but it is more than the covenantal community that they provide that makes them so. Thomas Green described an insidious caste system in education which puts urban learners in a "Group of Last Entry." Education in general, according to Green, has been shifting demands of achievement to younger and younger students. As urban schools could not meeting the funding requirements for better supplies, facilities and personnel to meet the needs of widening curriculum their grip on cutting edge

educational practice slipped continuously. As suburban and private schools offered more accelerated courses and better credentials for the college bound, the value of the urban high school diploma declined, and graduates of city high schools found that their diplomas could not guarantee them employment that could supply them with the benefits and goods of an education. They were reduced to the last group to enter the middle class.

“What kind of education is the best program to which everyone is entitled [by some principle of equality]? It is the education that the rich provide for their sons. Whatever that education might be.” (Green, 1977) And so, the magnet school, with the communal spirit, the shared vision, shared sense of purpose, recognition and respect becomes the best alternative for the students born to the Group of Last Entry. The quality of these schools provides education that closely resembles the education of a rich man’s son. The literature presented here concurs that strong sense of community will insure on going success of the magnet school.

Chapter Three

The Research Design

The focus of the intern's research was the Sense of Community within a magnet school. The magnet school was in operation for nearly eight years. The school had experienced growing pains that were manifested in a decline in attendance rate and standardized test scores. It was the intern's contention that the physical growth of the school in both student and staff census caused a drift from the original mission of the school. There were more members of the team who were not aware of the intensity of commitment that had characterized the first few years of the school. Those first years were, in actuality, an experiment that required exemplary commitment from all staff, students, administrators and parents.

Members of the original learning community had been indoctrinated in the school's mission, and through this indoctrination were able to participate as integral craftsmen in the manufacture of the character of the school. They worked collaboratively to design curriculum that reinforced the mission, and fulfilled all of the state mandates as well.

SPARC (Science Preparation Alliance of Rutgers and Camden) was instrumental to the school faculty's indoctrination even before the doors were opened to students. This program was an important professional development component for staff, and during subsequent years, a summer research experience for students that helped infuse the tenants of scientific method into all curricula. The program gave staff the tools that were necessary to build meaningful collaboration into all content area instruction.

Staff indoctrination through SPARC and the perception that they were part of a noble experiment galvanized their sense of community in the school. Students perceived that they had a genuine stake in the goals of their school because the purpose of their school was their success.

The physical plant of the school at that time played a significant role. The sixty-eight individuals who comprised the staff and students shared eight small classrooms and several offices with obstructions left from the previous use. The floor had originally served as a nursing school dormitory. All of the renovated spaces were accessible to everyone; there were no closed doors. There were no isolationists. The closeness and accessibility reinforced the idea that this school was very different from other high schools.

The second year of the school's operation brought about a one hundred percent increase in student population and fifty-percent increase in staff. One hundred and twenty people shared the same inadequate space. The new staff and students were assimilated into the community, but two areas were weakened in the process. Collaboration between content areas was performed on an informal basis due to the number of faculty and students that needed to be accommodated at one time, and Project SPARC was no longer funded as professional development.

Subsequent years of operation saw further increases in student and faculty census and the move to a new base of operation, a rehabilitated book factory. There was a perception of a decline in shared vision, weakened collaboration and some faculty isolationism that is characteristic of large, comprehensive high schools. There seemed to be a lessened sense of community.

The intern's aim in this research project was to establish a baseline measure of the school's culture, and then determine which factors influenced the measure. It was the intern's hypothesis that suggested that the specific professional development opportunity of Project SPARC increased sense of community for its participants by driving home the mission of the school, creating a forum for serious collaboration and planning, and providing support for infusion of science into all curricula.

Royal and Rossi's Measures of Sense of Community Survey was chosen by the intern for its high reliability and validity. Spearman-Brown reliability tests on administrations of the survey consistently bore results greater than .90, and the survey has been used in five large urban high schools across the country as part of a U.S. Department of Education whole school reform project. Site observations corroborated the results of the surveys.

The Royal and Rossi survey was chosen because of its consideration of Time-Related Variables, Work Arrangement Variables and School Organization Variables. Time-Related Variables examined length of employment or tenure relative to a staff member's sense of community, and amount of interaction or collaborative time of staff both in and out of work groups. This was particularly important in the intern's study since faculty collaboration was an important element in the school's mission that was weakened after the curtailment of funding for SPARC. Royal and Rossi's research pointed to a higher sense of community for staff who interacted often with colleagues.

Work Arrangement Variables was another significant component of the survey for the intern. The administrator of the magnet school of the intern's study encouraged team teaching. These team-taught classes were highly successful for both students and

teachers. They provided an opportunity for content area research independent of core curriculum; investigation of specific subject matter from two divergent disciplines and in a more concentrated and meaningful application for students; and modeling of good collaborative effort students through mutual respect of two seasoned educators.

Finally, the School Organization Variables that Royal and Rossi expressed as student discipline were characterized as an essential element in sense of community. Orderly student behavior was an outcome of high sense of community rather than a cause of it, and teachers were perceived as having a diminished sense of community when misbehavior interfered with instruction. This was a contentious issue in the intern's school.

Each of the three variables, according to Royal and Rossi, effect community experience. Strong sense of community can enhance an individual's perception of his or her school, and can improve their classroom performance.

Royal and Rossi's Survey of Measures of Sense of Community was designed to assess ten different aspects of community including shared vision, shared sense of purpose, shared values, caring, trust, teamwork, communication, participation, incorporation of diversity and respect, and recognition.

Development of the Design of the Research Instrument

The Royal and Rossi Measures of Sense of Community were prepared in the form of a questionnaire. The original sixty-one measures in three categories, Co-worker Related, School Related, and Student Related, were re-ordered to diffuse the categories. The original measures were re-phrased as statements and numbered. A new statement was added which identified the number of years a respondent had served on the staff of

the school. A question regarding gender, age and ethnicity was re-phrased as three separate statements. A Likert-type response format was used for all statements as *always, frequently, sometimes, rarely and never*. Thirteen statements were reverse scored.

The intern had administered the Measures of Sense of Community Questionnaire to all staff of the school to establish a baseline in March, 2001. Project SPARC was resurrected as part of a Whole School Reform Start-Up Grant in June and July of 2001, and was made available to all members of teaching, clerical, food service and custodial staff of the school who wished to participate. Hence the intern was able to use the baseline results of the March administration of the questionnaire as a pretest. The questionnaire was administered again in September 2001 as a posttest to determine if SPARC had impacted the sense of community of the school. A new, two-part statement was added in the posttest administration which identified the number of years a respondent had served on the staff of the school, and whether or not they had participated in Project SPARC. There were a total of sixty-five statements in the posttest.

Sampling Technique

The sample for each administration of the questionnaire was the entire population of the school staff including administration, faculty, clerical, food service and custodial.

Data Collection

The pretest was presented at a staff meeting in March, and posttest at a staff meeting in September. Questionnaires were distributed through school mailboxes, and were returned to the intern's mailbox. Participants were asked to refrain from leaving any identifying marks on the questionnaires other than circled choices from the scale. A

gift of candy and a reminder were distributed to all participants approximately fourteen days after each of the questionnaire distributions. The pretest had a 77% return, posttest, an 80% return.

Pretest questionnaires were separated into groups determined by the response to the statement concerning length of service. Posttest questionnaires were separated into groups determined by length of service and participation or non-participation in Project SPARC. Each response was scored according to the Likert scale where always = 5, frequently = 4, sometimes = 3, rarely = 2 and never = 1. Thirteen statements which were phrased in the negative were scored in the reverse of this order.

Date Analysis Plan

Intensity of Sense of Community was measured by the sum of points for each group by the number of years of service on staff and by individual SPARC participation. By studying the scores and making comparison between the groups the intern was able to draw some conclusions.

The intern was able to see a correlation between participation in Project SPARC and individual staff sense of community. A correlation between number of years of service on staff and sense of community was also evident from scores. The group with longest service had the highest sense of community in the pretest.

Chapter Four

Presentation of the Research Findings

The intern has been a member of the staff of a magnet school for seven years, having joined the school community in 1995, during its second year of operation. The intern had the opportunity to observe the evolution of the institution. However, over the years there was a perception of deterioration of the school's mission. The school had expanded from fifty to three hundred students; the faculty increased from six to thirty; and the school moved to newly renovated quarters. Test scores and attendance figures dipped.

These factors certainly changed the school, but the intern wanted to capture the extent of staff commitment to the school's original mission, and perhaps, identify the cause of the weakening of the school's focus. The Royal and Rossi Measures of Sense of Community administered in the form of a questionnaire in the spring of 2001 provided the intern with a snapshot of the mood that pervaded the staff.

The data from the initial questionnaire revealed that staff with longest membership in the school community had a greater sense of community. The intern examined several factors that could have produced these results. The variables included a probability that later arriving staff were not acculturated to the community; newer staff members were not accepted by students; and a third probability, that the oldest members of staff had more of a vested interest in the success of the school. In addition there was a perception among some staff that the academic caliber of some incoming students was lessened, and that these students did not share the same pride in achievement as the first

group of students in 1994. These newer students had come to the school at the behest of their parents rather than through their personal desire to attend a science magnet school.

The starkest difference between the staff groups with longest and shortest membership was an indoctrination program. This program, Project SPARC, presented in the summer preceding the opening of the school in 1994, had given the original staff a framework within which they could design their curriculum. The program was based on the tenets of inquiry learning, and gave staff an opportunity to practice the kind of intense teacher collaboration across diverse content that could drive the curriculum of a science magnet school.

Collaboration helped bond the faculty, and during those first years of the experiment of the school, teacher collaboration formed a safety net for the students. Two or more teachers would identify potential problems and they would be worked out in an expedient manner. Unfortunately the program was eliminated after the first year due to lack of funding. After the elimination of SPARC collaboration among faculty was greatly diminished since newer teachers were unaware of its importance, unconvinced of its efficacy, or not quite sure how to go about collaborating with colleagues.

A Whole School Reform Start-Up Grant was given to the school in May 2001, and when a piece of this funding was allocated for SPARC to resume in July, teachers responded. Fifteen members of the staff took advantage of the four-week program.

This chronology of circumstances gave the intern the opportunity to examine the effects of SPARC through a post-SPARC program administration of the Sense of Community questionnaire. The questionnaire was distributed to all 48 members of staff on September 30, 2001, and collection of completed questionnaires occurred through

December. There was an eighty-five percent return rate, however, participants in the SPARC program proved significantly (24%) more likely to return the surveys.

**POST- SPARC SURVEY RETURNS – DECEMBER, 2001
BY YEAR OF STAFF MEMBERSHIP & PROGRAM PARTICIPATION**

	1994	1995	1996	1997	1998	1999	2000	2001	% Returned
SPARC Participants	5	4	2	2	0	1	4	1	95%
Non- Participants	0	2	7	5	0	0	3	4	77%

The intern assigned a numeric value to each of the forty-one responses, and separated respondents according to participation or non-participation. The sums of all participant responses or non-participant responses for each of the sixty-one questions were compared. A percentage score was assigned to these sums based on the total possible value.

SPARC participant respondents had greater sense of community scores for most work-related measures. This was especially evident with regard to statements concerning collaborative relationships, for example, teamwork; cooperation; setting standards and working on cross-curricular projects.

Non-participant respondents had greater sense of community for most of the school-related measures. The statements were structured around staff relationship to the direction and operation of the school, and neither of these functions was likely to engage new staff in decision-making. However, in one of the questionnaire statements concerning staff's personal alignment with school goals, SPARC participant respondents scored 30% higher.

SPARC participants and non-participant respondents had relatively even scores in questionnaire statements concerning students. Both groups scored high with a 94% sense of community with regard to respondents' perceptions of the importance of their work.

The intern was encouraged by the post-program sense of community scores. The perception of the staff in informal interviews was that morale was, in general, quite low. Despite low morale, there was a significant increase in staff sense of community.

Most dramatic of the variables effecting morale was the tragedy of September 11 that occurred one week after the beginning of school and a little more than two weeks before administration of the survey. Issues of diminished personal safety and feelings of vulnerability were pervasive. The events of the tragedy were not acknowledged by administration until several weeks had past.

Another thing that had effects on staff morale was their perception of undue interference from central administration. For instance, staff was not able to interact and plan for the coming school year because three consecutive in-services were held for the entire school district on the three days preceding the first day with students. Time was needed for staff to be in-serviced within the school concerning two, new programs, and this could not be accomplished. As a result these programs have not been as successful, and have frustrated staff.

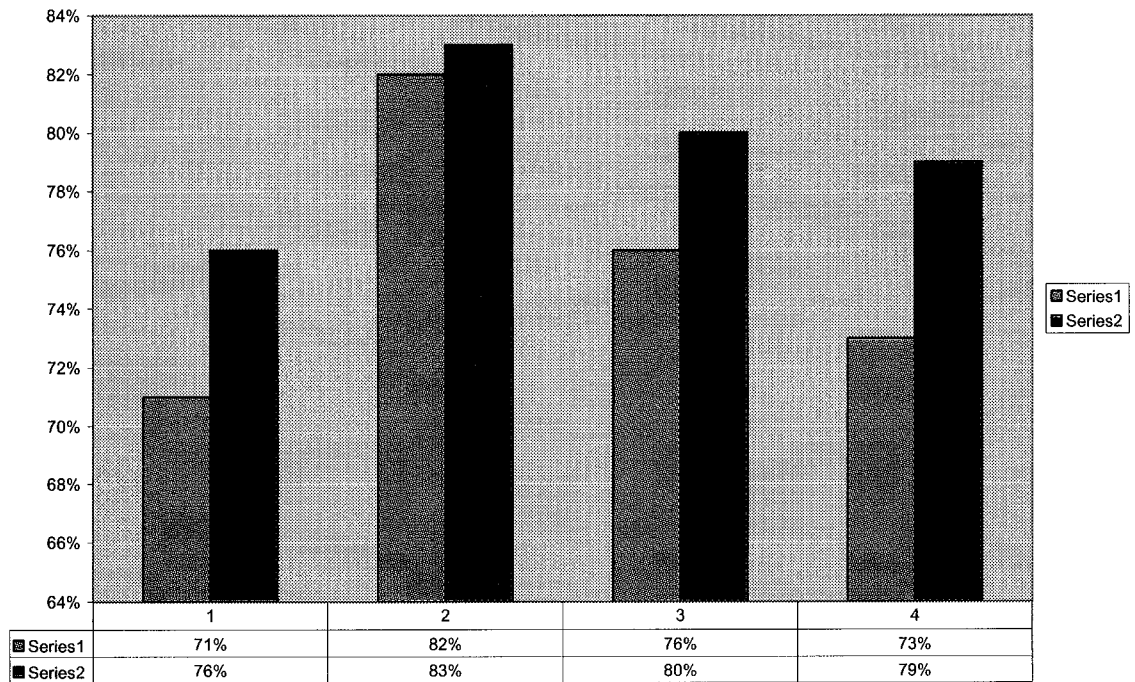
Finally, the school's only administrator had been in attendance at frequent, daylong meetings with central administration. Matters of discipline were not addressed in a timely manner, and this was particularly frustrating and stratifying for staff at the start

of the school year. Staff members perceived their colleagues as being firm or weak. These issues were counter to a strong sense of community.

However, as the intern examined and compared results of pre-program and post-program administrations of the Sense of Community questionnaire it was discovered that there was a significant increase in the staffs' commitment to the school on most of the sixty-one statements. On specific issues concerning staff relationships in work groups, increases were as high as 25 to 30%. The intern considered that the SPARC program had sufficiently trained key staff members. Their commitment to collaboration had compelled other staff to see the importance of weekly collaboration sessions. The SPARC participants were confident in infusing science into all areas of the curriculum through the use of inquiry learning, and therefore they modeled and demonstrated for non-participants.

The intern noted increases in staff sense of community from pre to post-questionnaires in the area of School-related Measures as well. Despite the perception that staff was disillusioned by central administrations' commitment to the school there was a 21% increase in the statement concerning the staffs' agreement with the building administrator's vision for the school, and a 10% increase in staffs' alignment with school goals. Just three weeks after the World Trade Center catastrophe 86% of staff expressed that the building principal was concerned with their personal safety and well being. This was a 27% increase over the pre-program questionnaire. Data from the post-program questionnaire revealed a 23% increase in staffs' perception of the building principals' vision for the community.

COMPARISON OF SC SURVEY RESULTS



The intern noted increases in the area of Student-related Measures as well. While the increases were not as dramatic as those in Work Group-related Measures or School-related Measures most statements revealed increases from three to eleven percentage points. There was an all over increase of 5% in this category. There is a perception that discipline and a consistent system of rewards and consequences is lacking in the school, but there is another perception among staff that the caliber of incoming students is improving.

While there are many variables that may effect how staff as subjects in this research responded on the questionnaires the intern concluded that some factors were more substantive than others. The effects of Project SPARC on the program participants seemed to affect a significant increase in the all over sense of community of the magnet school.

Chapter Five

The intern has investigated the magnet school as a unique secondary school. The magnet school that was the subject of the intern's research was instituted as a unique learning experience with a strong, central focus in science and medicine. Students have enrolled in the school because of its reputation; its seven-year track record of success at preparing students for higher education; and because of the excellence of its teaching staff. However, over the years of operation there has been a weakening of the mission.

It was the intern's perception that the weakened mission was due to a deterioration in shared values of staff concerning students and school; lack of commitment of staff and students to the mission and focus of the school; staff and student distrust of administration due to an apparent diminished interest in the success of the program; and perception of the weakening of the bond of care and respect between staff and students that had characterized the early days of the school. The intern administered a highly valid and reliable instrument that measured sense of community of staff, and the data gathered from all of the responses revealed that the school had a 73% sense of community. The data neither confirmed nor refuted the perception of weakened community, but it did provide a baseline measure.

The data did reveal that staff with longer membership was more committed to the school, but they were the originating faculty. There were eight faculty members, they had shared tight quarters for the first two years of the school, one ten-room floor of a dormitory, and there were only one hundred students. They had bonded to each other, and they carved the way for the rest of students and staff that followed. A special program was provided for them that helped them establish the program. It indoctrinated the group

into a theme-driven style of teaching, and cemented the idea of the science magnet school. No other groups received this indoctrination until it was offered again, several years later and three months after administration of the intern's sense of community questionnaire.

The program was held during the summer. It encouraged participants to explore particular subjects as groups, and so provided avenues for discussion and communication. Staff participants had shared experiences and gained respect for each other. The collegial spirit that had marked the early faculty of the school could be seen in the group of new staff participants. Through group planning they charted steps that they felt would need to be instituted in the school to improve focus.

The SPARC program faculty entered in September on a very hopeful note, but they were crestfallen when their opportunity to plan with the rest of the staff was eliminated by three days of district-wide in-service. They did not have a substantial block of time to work; however, there was a new commitment to collaboration sessions. These were built into the faculty schedules. The following week the World Trade Center was attacked, and while staff rallied around each other and the students, the message from administration was one of denial and business as usual.

Despite a fairly negative beginning to the school year, the intern administered the post-program Sense of Community Questionnaire. Data revealed that even with the rather glum atmosphere in the school, sense of community had increased from the initial administration in the spring.

Conclusions

The intern observed that over the eight-year life of the magnet school sense of community manifested in collegiality, unity in focus, caring, mutual respect, staff and student commitment to the program has been a major component in the success of the school's program. And while change has been an inevitable event in the life of this institution it has not signaled its demise.

Project SPARC as specific professional development for the staff of the magnet school has provided a vehicle that has directed faculty focus toward issues of best practice, has provided time and neutral space to communicate outside of the confines of the school and its schedule. Project SPARC provided a training ground in collaboration and collegiality. When a new building and incorporation of new staff and students caused change within the magnet school and weakened these components Project SPARC was reinstated and reinforced them.

The Sense of Community Questionnaire measured the staff of the magnet school's commitment before and after Project SPARC was reinstated, and data revealed a significant increase in staff sense of community in the post-program administration. Although the increase could be attributed to a group of other variables, only Project SPARC specifically trained staff in components that were traits common to a high sense of community within school groups in nationwide research.

Implications

The magnet school of the intern's study has been reevaluating its methods and practices over the past two years, in part due to the Whole School Reform movement in

New Jersey. The school applied for the status and was named by the New Jersey State Department of Education as an Alternative Model of Whole School Reform. The self-evaluation as part of the process of the Alternative Model application revealed a need to strengthen and reinforce specific areas of the school's operation. The initial Sense of Community Questionnaire provided a baseline measure of the staff's commitment to the school's mission and purpose. The September administration of the posttest questionnaire measured staff sense of community, but additionally provided documentation that specific professional development could improve staff commitment to the school's mission and purpose. Therefore, Project SPARC may be considered a specific need toward the ongoing success of the educational program at this magnet school.

With the apparent demise of Whole School Reform in New Jersey the magnet school would require a fortified community spirit. Despite federal mandates to provide equity the state's fiscal crisis would supercede Abbott school needs. Non-traditional funding sources would need to be secured, and this would require additional staff hours outside of teaching to be accomplished.

Further Study

The intern has observed the interactions between staff members at the magnet school in this study, and to a lesser extent, interactions between students and staff members. The observations of staff-to-student relationships were made only in regard to staff perceptions, and how this affected their personal sense of community.

An administration of the Sense of Community Questionnaire to students would shed light on difference in commitment between grade levels. An observation of staff has been that ninth and tenth grade students seem to be more conducive to school

activities and traditions, for example, wearing uniforms. Administration of a Sense of Community Questionnaire to students could pinpoint areas of weakness in student commitment with regard to work-related issues, school-related issues and teacher-related issues similar in scope to the staff questionnaires. Students would need to feel that completing the questionnaire could lead to positive change in the school.

Data compiled from students' completed questionnaires could, at the very least, open up points of dialogue between staff and students.

The questionnaire could also be administered to parents, the least visible group in the community of the school. While there is no dispute that parent and community participation are extremely important components in the success of the school, it is, perhaps, the most difficult piece of the puzzle to achieve. Opening dialogue with the parents of each of the grade levels would be a first step in reaching that goal. The Sense of Community Questionnaire would be a valuable instrument to this end.

Appendix A
Research Instrument

This questionnaire is Part Two of The Sense of Community Survey you completed in March. Please answer the questions below by placing a check by the number which most nearly reflects your attitude toward the statement on a scale of (a) always, (b) frequently, (c) sometimes, (d) rarely or (e) never. All questionnaires are strictly anonymous. Please do not write your name or leave any other identifying marks on these sheets.

1. I became a member of the staff here in

1994 1995 1996 1997 1998 1999 2000 2001

I _____ participate in Project SPARC.

did did not

2. We act according to work values commonly held here.

3. (a) always (b) frequently (c) sometimes (d) rarely (e) never

4. My work is meaningful to me.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

5. We pull together in the face of crises.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

6. When I think of the purpose of my work, it makes me want to work harder.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

7. We don't really know each other very well.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

8. Students and I work well together.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

9. Building administrators can be trusted to establish procedures for personal safety.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

10. Students and I treat each other with respect.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

11. We disagree over work values.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

12. Students show interest in my well being.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

13. We treat each other with respect.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

14. Students and I don't really know each other very well.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

15. We work as a team.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

16. On Mondays students and I are happy to see each other.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

17. Most of us are dedicated to the work of the school.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

18. Students listen and respond when I present ideas.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

19. We hold to our work values even when it is difficult to do so.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

20. I have confidence in the integrity of students here.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

21. Members of diverse ethnic groups relate to each other here.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

22. When I do a good job students let me know.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

23. When I need help, others offer to help.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

24. Students and I cooperate easily.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

25. One department/work group's accomplishments are recognized by other departments/ work groups.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

26. I get up-to-date information about school issues.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

27. Staff from different departments/work groups disagree over work values.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

28. I feel appreciated here.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

29. Staff from different departments don't really know each other.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

30. I feel free to be myself in this school.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

31. I feel able to ask questions about work.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

32. When one department/work group presents ideas other departments/work groups listen and respond.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

33. I don't like the direction that the building administrators are taking us.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

34. I have confidence in the integrity of staff across departments/work groups.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

35. I feel that my age is holding me back here.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

36. Different departments/work groups cooperate easily on joint projects.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

37. I identify with this school and its goals.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

38. We have mutual concern and caring across department/work groups.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

39. I play an important role in the work of this school.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

40. Most staff and students make an effort to stay informed.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

41. I feel that my gender is holding me back here.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

42. We share common values regarding how students should be treated.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

43. Building administrators honestly reveal risks associated with assigned staff duties.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

44. We share common values regarding standards for student performance evaluation.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

45. When I do a good job, building administrators let me know.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

46. We share common values regarding the level of effort required of students.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

47. Building administrators listen and respond when I present ideas.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

48. We share common values regarding standards for staff performance evaluation.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

49. I feel that my ethnic background is holding me back here.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

50. We share common values regarding staff treatment.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

51. Building administrators can be trusted to safeguard the interest of staff.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

52. Staff can be counted on to keep commitments.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

53. Building administrators cooperate easily with each other.

(a) always (b) frequently (c) sometimes (d) rarely (e) never

54. On Mondays, we are happy to see each other.
- (a) always (b) frequently (c) sometimes (d) rarely (e) never
55. Building administrators have an inspiring vision of what we can all achieve together.
- (a) always (b) frequently (c) sometimes (d) rarely (e) never
56. Most staff and students would prefer to ignore issues that don't affect them directly.
- (a) always (b) frequently (c) sometimes (d) rarely (e) never
57. I disagree with building administrators about work values.
- (a) always (b) frequently (c) sometimes (d) rarely (e) never
58. Staff and students take responsibility for improving the school environment.
- (a) always (b) frequently (c) sometimes (d) rarely (e) never
59. Building administrators treat me with respect.
- (a) always (b) frequently (c) sometimes (d) rarely (e) never
60. We look for scapegoats when things aren't going well.
- (a) always (b) frequently (c) sometimes (d) rarely (e) never
61. I have confidence in the integrity of building administrators.
- (a) always (b) frequently (c) sometimes (d) rarely (e) never
62. We share common values regarding the level of effort that should be required of employees.
- (a) always (b) frequently (c) sometimes (d) rarely (e) never
63. Staff members are treated unfairly by building administrators.
- (a) always (b) frequently (c) sometimes (d) rarely (e) never
64. Building administrators show interest in my personal well being.
- (a) always (b) frequently (c) sometimes (d) rarely (e) never
65. We cooperate easily.
- (a) always (b) frequently (c) sometimes (d) rarely (e) never

Appendix B

Mission and Goals of Project SPARC

(Taken from the 2001 SPARC
Teachers Workbook)

Welcome to the SPARC Summer Institute!

The SPARC program is designed to spark excitement and enthusiasm for science in children and young adults by studying Life Sciences and the Sciences of the Mind and Brain. Our goal for the 5 weeks of the Summer Institute is to help you foster that excitement by learning a variety of skills and methods that you can make use of in the classroom. We will relate the things you learn to the brain, behavioral and cognitive sciences, and we will also introduce you to information and resources that relate to these topics.

During the week, our daily schedule will be more or less flexible, but it will be structured around a core set of activities. Sessions will begin with a presentation by one of the program staff on a topic in the sciences of the mind and brain. This presentation will be followed by a workshop activity. The workshop activities are intended to give you a chance to use inquiry learning methods. You will also learn to use various types of equipment, computer software and research methods. Sessions will usually end with a curriculum development period. In the curriculum development period, you and the program staff will develop modules that you can use to incorporate the information and materials presented during the session into your curriculum.

On Fridays, we will take a field trip to one of the institutions in the area that deals with the Sciences of the Brain. Our first field trip will be on June 29th to the Mutter Museum and the Franklin Institute. We are still finalizing the schedules for our remaining field trips, which will be on July 6th, July 13th, and July 20th, but the sites we will visit are the Monell Chemical Senses Center, the Coriell Institute for Medical Research, and the Temple University Psychology Department.

Introduction

I. Project Philosophy and Goals

A. SPARC

The SPARC program was designed to increase the appeal of scientific, mathematical and technical skills for students in the city of Camden, New Jersey. SPARC stands for Science Preparation Alliance of Rutgers and Camden; it represents a partnership between Rutgers University and the Camden public school system to support the teaching of science and math.

B. Relationship to the Medical Arts High School

The SPARC program worked closely with school administrators in Camden to plan and initiate the development of the Medical Arts High School. Prior to its opening in September of 1994, all of the teachers who were selected for the first year of operation participated in a SPARC Summer Institute. In the first three years of operation of the school, a large majority of the freshman class participated either in a summer institute or a research experience in the summer after their freshman year. SPARC also design the Allied Health Sciences Expo for the eighth grade students to allow those interested to explore more about the Allied Health fields prior to applying to Medical Arts High School.

The goal of the school is to prepare students who express an interest in the allied medical field to be accepted into post secondary training and to succeed in the career of their choice. The mission of the school is accomplished through academic preparation, and by exposure to medical professionals and visitations to medical facilities as an integral part of the curriculum. In addition, teachers' Collaboratives discuss and plan ways to integrate designated medical themes across all content areas.

It is with a view to this collaboration that this SPARC Summer workshop has been developed. All participating staff members, regardless of subject area or function will benefit from an exposure to Inquiry Learning Methods, and a broad exploration of the Behavioral, Biological and Cognitive Sciences. This exploration will include field trips to institutions involved in research in the brain and cognitive sciences and a study of the themes of the Medical Arts High School with planned activities to integrate these themes into all phases of the school.

Instructional Objectives

I. Overview

The SPARC program seeks to strengthen the scientific and technical knowledge base of teachers with respect to the brain, behavioral and cognitive (BBC) sciences. An equally important goal, however, is to instill in the participants a sense of enthusiasm and excitement about the present and future state of the BBC sciences. Only by being enthusiastic themselves will teachers be able to communicate and reinforce a sense of wonder and excitement to their students. The summer program is therefore designed to provide both factual information and “hands-on” experiences, and during the Institute, participants will:

- * learn to use Windows-based computers as tools for instruction and research, especially in science and math;
- * learn to think about human cognitive abilities in terms of an information-processing framework that emphasizes the need for individualized study approaches;
- * learn about how the brain works and how that understanding can guide successful approaches to education;
- * learn how to do laboratory experiments on the neurobiology and pharmacology of drug effects;
- * develop laboratory and classroom exercises and problem sets that incorporate knowledge about the BBC sciences into the pre-college curriculum; and
- * learn about resources and opportunities in the BBC sciences that are available in Camden and the surrounding region.

II. Structure of the Summer Institute

The SPARC Summer Institute is a 4-week course that runs from June 26 through July 24. The institute will begin with an overview of our current understanding of the nature of human cognitive

abilities and how cognitive functions are related to the brain and proceed to look at the biological basis of cognition in terms of structure and function.

At the start of each week, the SPARC program will present a question or problem. The task for the week will be to learn relevant information about the BBC sciences that can be used to answer the questions or solve the problem. This framework is intended to promote the use of inquiry learning methods by the participants, and before the end of the week, the participants will present possible answers or solutions for discussion. The week will end with a field trip to a museum or research center that can be a resource for teachers to use in gathering information or arranging class trips to do with science and the application of science to our daily lives.

III. Goals of the Institute

We have 4 goals this summer. One goal is to give you a sense of the mission of the Dr. Charles E. Brimm Medical Arts High School and of the possibilities for students who are attending Medical Arts. The allied health sciences are exciting areas of study but also challenging areas of study as the health care industry continues to undergo significant changes. Training students to meet the needs of these fields remains a challenging objective. The ability of the students from Brimm to compete successfully in the world in which they will find themselves depends critically upon their having a clear vision of possibilities.

A second goal is to give you a sense of current developments in the brain, behavioral and cognitive sciences so you can feel more knowledgeable about these areas. The 1990's were designated **The Decade of the Brain**, and the 2000's have been designated **The Decade of Behavior**, and impressive advances in research and understanding have emerged and continue to emerge in the BBC sciences.

A third goal is to help you use our current understanding of the BBC sciences to help you think about effective teaching

strategies. Many reports have examined our educational enterprise and recommend changes toward greater use of curriculum standards and of inquiry learning methods, but how does one actually make such changes, and why should these changes be effective? We will look at reports from the National Academy of Science and from the Third International Mathematics and Science Study (TIMSS) as part of reaching this goal.

The fourth goal is to help you develop lessons that integrate the themes of Medical Arts with your area of expertise or interest.

Appendix C

Sense of Community
Posttest

Sense of Community Statements	Initial Year of Membership in the Staff									SC Points	Total Possible SC Points	% SC
	1994	1995	1996	1997	1998	1999	2000	2001	SPARC			
<u>CO-WORKER RELATED MEASURES</u>												
1. Staff members in this school act according to work values commonly held here.	20	16	9	8	0	4	15	5	YES	77	95	81%
	0	7	26	21	0	0	14	19	NO	87	105	82%
2. We pull together in the face of crises.	21	19	9	8	0	5	15	5	YES	82	95	86%
	0	8	31	22	0	0	14	19	NO	94	105	89%
3. We don't really know each very well.	16	13	7	6	0	3	16	3	YES	64	95	67%
	0	3	22	13	0	0	9	11	NO	58	105	55%
4. We cooperate easily.	19	16	8	7	0	4	19	5	YES	78	95	82%
	0	7	30	21	0	0	13	4	NO	75	105	71%
5. We disagree over work values.	12	14	7	6	0	4	13	4	YES	60	95	63%
	0	7	26	18	0	0	11	14	NO	76	105	72%
6. We treat each other with respect.	20	16	8	8	0	4	20	3	YES	79	95	83%
	0	9	29	21	0	0	13	17	NO	89	105	84%
7. We work as a team.	21	16	7	6	0	4	19	4	YES	77	95	81%
	0	8	25	19	0	0	11	16	NO	79	105	75%
8. Most of us are dedicated to the work of the school.	20	18	9	8	0	4	19	4	YES	82	95	86%
	0	9	30	19	0	0	13	19	NO	90	105	85%

9. We hold to our work values even when it is difficult to do so.	20	17	8	6	0	3	19	5	YES	78	95	82%
	0	8	31	22	0	0	14	18	NO	93	105	88%
10. Members of diverse ethnic groups relate to each other here.	22	17	9	8	0	3	14	5	YES	78	95	82%
	0	8	28	19	0	0	12	18	NO	85	105	80%
11. When I need help, others offer to help.	21	16	6	8	0	4	19	5	YES	79	95	83%
	0	9	24	19	0	0	11	17	NO	80	105	76%
12. Staff can be counted on to keep commitments.	18	15	6	8	0	4	18	5	YES	74	95	77%
	0	7	28	20	0	0	11	18	NO	84	105	80%
13. On Mondays, we are happy to see each other.	19	18	8	8	0	4	16	5	YES	78	95	82%
	0	5	30	20	0	0	11	19	NO	85	105	80%
14. Most staff and students would prefer to ignore issues that don't affect them directly.	17	14	6	7	0	4	15	1	YES	64	95	67%
	0	7	18	12	0	0	11	15	NO	63	105	60%
15. Staff and students take responsibility for improving the school environment.	18	16	8	6	0	3	19	3	YES	73	95	76%
	0	9	26	16	0	0	11	18	NO	80	105	76%
16. We look for scapegoats when things aren't going well.	19	13	6	6	0	4	16	3	YES	67	95	70%
	0	7	25	19	0	0	13	19	NO	83	105	79%
17. We share common values regarding the level of effort that should be required of employees.	19	14	8	7	0	3	20	5	YES	76	95	80%
	0	9	29	20	0	0	12	19	NO	89	105	84%

18. We share common values regarding staff treatment.	19	15	7	7	0	4	17	5	YES	74	95	77%
	0	9	30	19	0	0	11	18	NO	87	105	82%
19. We share common values regarding standards for staff performance evaluation.	19	16	6	6	0	4	18	4	YES	73	95	76
	0	9	21	19	0	0	10	17	NO	76	105	72%
20. We share common values regarding the level of effort required of students.	20	15	6	6	0	4	18	4	YES	73	95	76%
	0	4	14	21	0	0	12	18	NO	69	105	65%
21. We share common values regarding standards for student performance evaluation.	21	17	7	6	0	4	18	3	YES	76	95	80%
	0	9	25	19	0	0	12	13	NO	78	105	74%
22. We share common values regarding how students should be treated.	20	14	8	8	0	3	18	5	YES	76	95	80%
	0	9	26	19	0	0	12	18	NO	84	105	80%
23. Most staff and students make an effort to stay informed.	21	17	9	6	0	3	19	4	YES	79	95	83%
	0	8	28	17	0	0	12	18	NO	83	105	79%
24. We have mutual concern and caring across departments or work groups.	20	17	9	7	0	3	19	5	YES	80	95	84%
	0	7	28	18	0	0	13	13	NO	79	105	75%
25. Different departments or work groups cooperate easily on joint projects.	19	17	6	6	0	3	15	4	YES	70	95	73%
	0	8	27	20	0	0	10	13	NO	78	105	74%
26. I have confidence in the integrity of staff across departments or work groups.	21	15	8	8	0	4	20	5	YES	81	95	85%

	0	8	28	21	0	0	12	18	NO	87	105	82%
27. When one department or work group present ideas other departments/work groups listen and respond.	20	17	8	7	0	4	18	4	YES	78	95	82%
	0	8	25	20	0	0	10	14	NO	77	105	73%
28. Staff from different departments don't really know each other.	20	15	6	7	0	4	11	3	YES	66	95	69%
	0	4	20	15	0	0	12	10	NO	61	105	58%
29. Staff from different departments /work groups disagree over work values.	15	14	7	7	0	4	8	3	YES	58	95	61%
	0	7	23	19	0	0	13	9	NO	71	105	67%
30. One department or work group's accomplishments are recognized by other departments/work groups.	20	14	6	6	0	4	15	2	YES	67	95	70%
	0	7	24	18	0	0	11	12	NO	72	105	68%
Sub-Total	577	695	999	774	0	112	860	592	0	4609	6000	76%
SCHOOL-RELATED MEASURES												
31. I don't like the direction the building administrators are taking us.	22	13	8	8	0	4	14	4	YES	73	95	76%
	0	8	28	19	0	0	11	18	NO	84	105	80%
32. I feel able to ask questions about work.	21	17	9	9	0	4	17	5	YES	82	95	86%
	0	9	32	21	0	0	11	20	NO	93	105	88%
33. I feel free to be myself in this school.	21	18	9	9	0	4	19	4	YES	84	95	88%
	0	9	34	24	0	0	12	19	NO	98	105	93%

34. I feel appreciated here.	19	15	7	8	0	4	14	5	YES	72	95	75%
	0	9	22	19	0	0	10	19	NO	79	105	75%
35. I get up-to-date information about school issues.	21	14	9	7	0	3	20	3	YES	77	95	81%
	0	9	29	21	0	0	14	16	NO	89	105	84%
36a. I feel that my age is holding me back here.	25	17	9	8	0	5	20	5	YES	89	95	93%
	0	10	27	24	0	0	14	19	NO	94	105	89%
36b. I feel that my gender is holding me back here.	22	18	9	9	0	5	20	5	YES	88	95	92%
	0	10	33	24	0	0	14	20	NO	101	105	96%
36c. I feel that my ethnicity is holding me back here.	21	15	7	8	0	5	20	5	YES	81	95	85%
	0	10	34	23	0	0	14	20	NO	101	105	96%
37. I identify with this school and its goals.	25	18	10	8	0	4	20	5	YES	90	95	94%
	0	9	30	20	0	0	13	4	NO	76	105	72%
38. I play an important role in the work of this school.	22	16	10	7	0	3	19	5	YES	82	95	86%
	0	9	33	20	0	0	13	17	NO	92	105	87%
39. Building administrators honestly reveal risks associated with assigned staff duties.	17	12	9	5	0	3	13	4	YES	63	95	66%
	0	10	23	18	0	0	4	15	NO	70	105	66%
40. When I do a good job, building administrators let me know.	17	12	6	7	0	4	18	5	YES	69	95	72%
	0	9	28	18	0	0	9	18	NO	82	105	78%

41. Building administrators listen and respond when I present ideas.	20	15	7	7	0	5	18	5	YES	77	95	81%
	0	9	26	17	0	0	12	19	NO	83	105	79%
42. Building administrators can be trusted to safeguard the interest of staff.	21	16	7	8	0	4	18	5	YES	79	95	83%
	0	9	29	21	0	0	13	19	NO	91	105	86%
43. Building administrators cooperate easily with each other.	21	15	9	6	0	5	20	4	YES	80	95	84%
	0	9	30	16	0	0	12	14	NO	81	105	77%
44. I disagree with building administrators here concerning work values.	17	16	8	8	0	5	19	5	YES	78	95	82%
	0	4	29	20	0	0	13	19	NO	85	105	80%
45. I have confidence in the integrity of building administrators.	21	15	8	8	0	4	20	5	YES	81	95	85%
	0	9	29	21	0	0	12	19	NO	90	105	85%
46. Building administrators can be trusted to establish procedures for personal safety.	20	15	8	6	0	4	18	5	YES	76	95	80%
	0	9	30	21	0	0	12	19	NO	91	105	86%
47. Building administrators show interest in my personal well being.	24	16	7	7	0	4	19	5	YES	82	95	86%
	0	10	28	19	0	0	10	19	NO	86	105	81%
48. Staff members are treated unfairly by building administrators.	21	15	9	7	0	4	16	5	YES	77	95	81%
	0	9	28	20	0	0	12	19	NO	88	105	83%
49. Building administrators treat me with respect.	23	17	8	9	0	5	20	5	YES	87	95	91%

	0	9	33	22	0	0	14	20	NO	98	105	93%
50. Building administrators have an inspiring vision of what we can all achieve together.	23	17	8	9	0	5	20	5	YES	87	95	91%
	0	8	28	21	0	0	11	19	NO	87	105	82%
												83%
Sub-Total	464	538	824	617	0	93	662	495		3693	4400	83%
										0		
STUDENT-RELATED MEASURES												
51. Students and I cooperate easily.	22	16	8	6	0	3	18	4	YES	77	95	81%
	0	9	29	20	0	0	12	18	NO	88	105	83%
52. When I do a good job students let me know.	18	17	7	6	0	2	13	2	YES	65	95	68%
	0	8	23	15	0	0	8	17	NO	71	105	67%
53. I have confidence in the integrity of students here.	24	17	8	8	0	3	17	4	YES	81	95	85%
	0	9	27	20	0	0	12	18	NO	86	105	81%
54. Students listen and respond when I present ideas.	19	18	6	8	0	4	17	4	YES	76	95	80%
	0	8	28	21	0	0	11	17	NO	85	105	80%
55. On Mondays students and I are happy to see each other.	19	16	8	7	0	3	16	4	YES	73	95	76%
	0	9	25	13	0	0	10	17	NO	74	105	70%
56. Students and I don't really know each other very well.	17	14	7	7	0	3	14	4	YES	66	95	69%

	0	3	15	15	0	0	11	12	NO	56	105	53%
57. Students show interest in my personal well being.	16	16	7	7	0	3	15	3	YES	67	95	70%
	0	9	28	18	0	0	11	16	NO	82	105	78%
58. Students and I treat each other with respect.	20	16	8	8	0	4	19	3	YES	78	95	82%
	0	10	29	22	0	0	12	17	NO	90	105	85%
59. Students and I work well together.	23	16	8	8	0	3	18	4	YES	80	95	84%
	0	10	28	22	0	0	13	17	NO	90	105	85%
60. When I think of the purpose of my work, it makes me want to work harder.	25	20	8	10	0	4	18	5	YES	90	95	94%
	0	9	34	23	0	0	14	20	NO	100	105	95%
61. My work is meaningful to me.	24	19	9	9	0	4	20	5	YES	90	95	94%
	0	10	33	23	0	0	14	20	NO	100	105	95%
												80%
Sub-total	227	279	383	296	0	36	313	231		1765	2200	80%
TOTALS	1268	1512	2206	1687	0	241	1835	1318		10,067	12,600	79%

Appendix D

Comparison of Pre and Posttest Results

Sense of Community Statements	% SC - PRETEST	% SC - POSTTEST
<u>WORK RELATED MEASURES</u>		
1. Staff members in this school act according to work values commonly held here.	77%	81%
		82%
2. We pull together in the face of crises.	78%	86%
		89%
3. We don't really know each very well.	54%	67%
		55%
4. We cooperate easily.	77%	82%
		71%
5. We disagree over work values.	61%	63%
		72%
6. We treat each other with respect.	82%	83%
		84%
7. We work as a team.	71%	81%
		75%
8. Most of us are dedicated to the work of the school.	80%	86%
		85%
9. We hold to our work values even when it is difficult to do so.	80%	82%
		88%
10. Members of diverse ethnic groups relate to each other here.	78%	82%
		80%
11. When I need help, others offer to help.	74%	83%
		76%
12. Staff can be counted on to keep commitments.	72%	77%
		80%
13. On Mondays, we are happy to see each other.	69%	82%

		80%
14. Most staff and students would prefer to ignore issues that don't affect them directly.	54%	67%
		60%
15. Staff and students take responsibility for improving the school environment.	68%	76%
		76%
16. We look for scapegoats when things aren't going well.	64%	70%
		79%
17. We share common values regarding the level of effort that should be required of employees.	74%	80%
		84%
18. We share common values regarding staff treatment.	72%	77%
		82%
19. We share common values regarding standards for staff performance evaluation.	70%	76%
		72%
20. We share common values regarding the level of effort required of students.	72%	76%
		65%
21. We share common values regarding standards for student performance evaluation.	73%	80%
		74%
22. We share common values regarding how students should be treated.	73%	80%
		80%
23. Most staff and students make an effort to stay informed.	72%	83%
		79%
24. We have mutual concern and caring across departments or work groups.	73%	84%

		75%
25. Different departments or work groups cooperate easily on joint projects.	69%	73%
		74%
26. I have confidence in the integrity of staff across departments or work groups.	76%	85%
		82%
27. When one department or work group present ideas other departments/work groups listen and respond.	73%	82%
		73%
28. Staff from different departments don't really know each other.	67%	69%
		58%
29. Staff from different departments /work groups disagree over work values.	64%	61%
		67%
30. One department or work group's accomplishments are recognized by other departments/work groups.	68%	70%
		68%
Sub-Total	71%	76%
SCHOOL-RELATED MEASURES		
31. I don't like the direction the building administrators are taking us.	62%	76%
		80%
32. I feel able to ask questions about work.	84%	86%
		88%
33. I feel free to be myself in this school.	78%	88%
		93%
34. I feel appreciated here.	73%	75%
		75%
35. I get up-to-date information about school issues.	71%	81%
		84%

36a. I feel that my age is holding me back here.	84%	93%
		89%
36b. I feel that my gender is holding me back here.	97%	92%
		96%
36c. I feel that my ethnicity is holding me back here.	91%	85%
		96%
37. I identify with this school and its goals.	84%	94%
		72%
38. I play an important role in the work of this school.	80%	86%
		87%
39. Building administrators honestly reveal risks associated with assigned staff duties.	55%	66%
		66%
40. When I do a good job, building administrators let me know.	65%	72%
		78%
41. Building administrators listen and respond when I present ideas.	72%	81%
		79%
42. Building administrators can be trusted to safeguard the interest of staff.	65%	83%
		86%
43. Building administrators cooperate easily with each other.	67%	84%
		77%
44. I disagree with building administrators here concerning work values.	66%	82%
		80%
45. I have confidence in the integrity of building administrators.	78%	85%
		85%

46. Building administrators can be trusted to establish procedures for personal safety.	68%	80%
		86%
47. Building administrators show interest in my personal well being.	73%	86%
		81%
48. Staff members are treated unfairly by building administrators.	74%	81%
		83%
49. Building administrators treat me with respect.	84%	91%
		93%
50. Building administrators have an inspiring vision of what we can all achieve together.	74%	91%
		82%
Sub-Total	82%	83%
<u>STUDENT-RELATED MEASURES</u>		
51. Students and I cooperate easily.	73%	81%
		83%
52. When I do a good job students let me know.	66%	68%
		67%
53. I have confidence in the integrity of students here.	74%	85%
		81%
54. Students listen and respond when I present ideas.	70%	80%
		80%
55. On Mondays students and I are happy to see each other.	73%	76%
		70%
56. Students and I don't really know each other very well.	65%	69%
		53%

57. Students show interest in my personal well being.	70%	70%
		78%
58. Students and I treat each other with respect.	77%	82%
		85%
59. Students and I work well together.	81%	84%
		85%
60. When I think of the purpose of my work, it makes me want to work harder.	88%	94%
		95%
61. My work is meaningful to me.	94%	94%
		95%
Sub-total	76%	80%
TOTALS	73%	79%

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Biographical Data

Name	Marianne Dell
High School	John W. Hallahan Catholic Girls' High School 19 th & Wood Streets Philadelphia, PA
Undergraduate	Bachelor of Fine Arts Printmaking University of the Arts Philadelphia, PA
Graduate	Master of Arts School Administration Rowan University Glassboro, NJ
Present Occupation	Art Teacher Dr. Charles E. Brimm Medical Arts High School Camden, NJ